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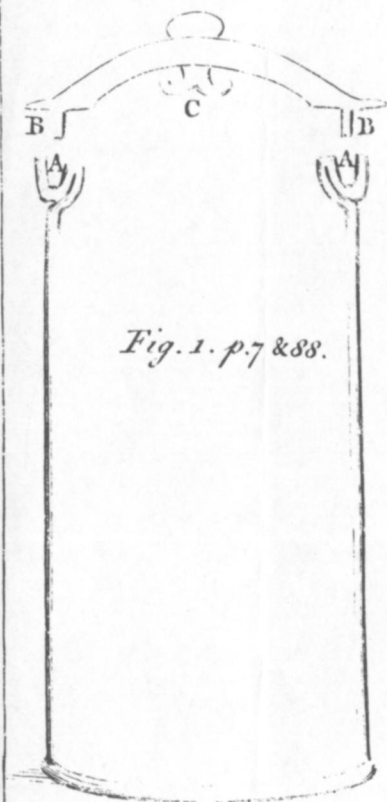
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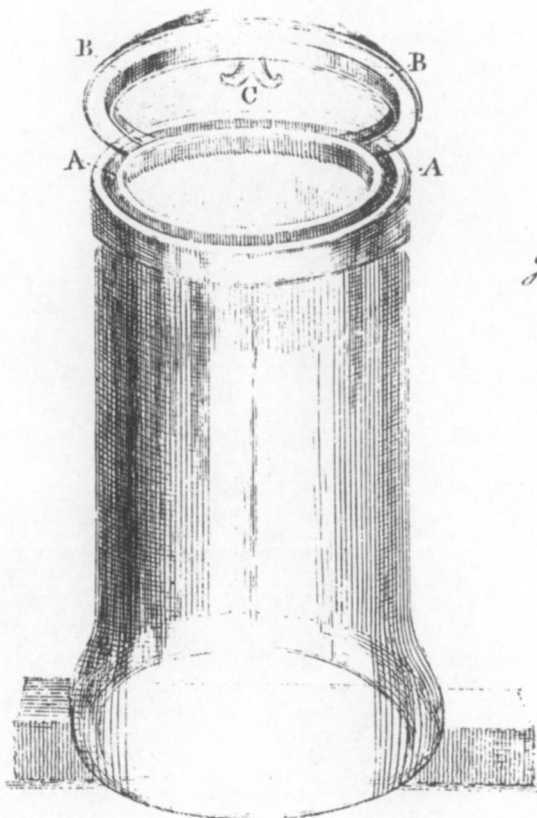
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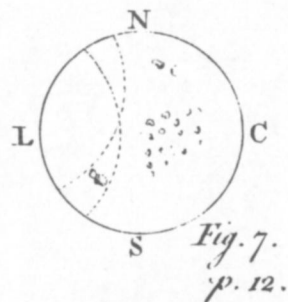
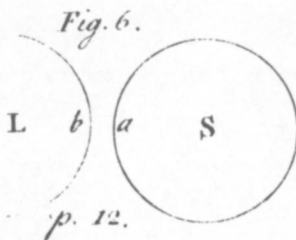
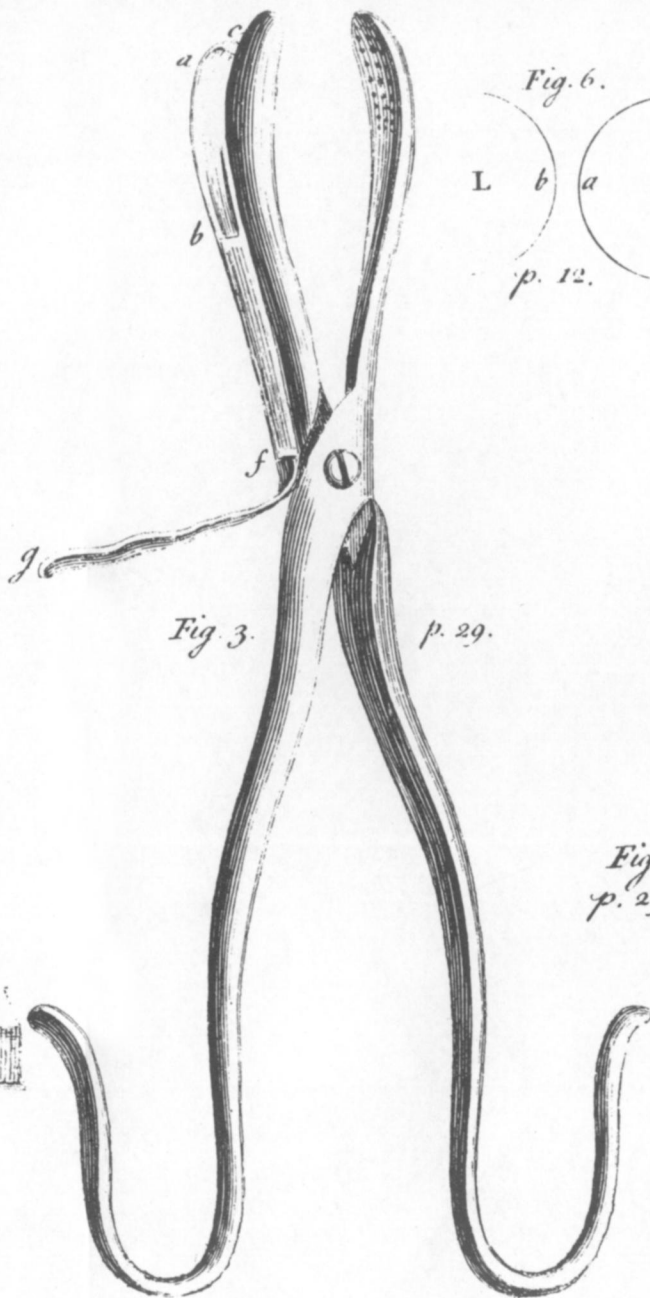
*Fig. 2. p. 7.*



*Fig. 1. p. 7 & 88.*

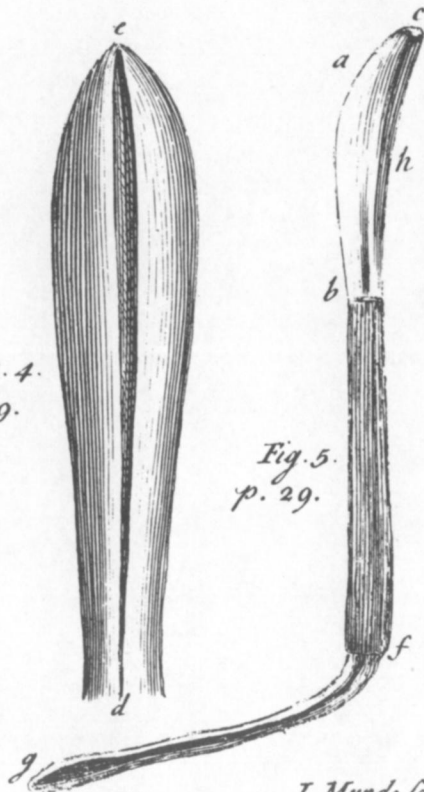


*Fig. 3.*



*Fig. 4.*

*p. 29.*



*J. Mynde sc.*

VIII. *Extract of a Letter from Benj. Heath Esq; to Peter Davall Esq; Secr. R. S. inclosing a Proposal for intirely removing the only real Defect in the lateral Operation for the Stone; by Mr. John Mudge Surgeon at Plymouth.*

*Dear Sir,*

Read Feb. 2. \* \* \*  
1748.

I TAKE the Freedom of conveying to you a Memoir written by a very ingenious young Surgeon of my Acquaintance proposing an Improvement in the lateral Method of cutting for the Stone. His View in putting me on giving you this Trouble is, that it may be laid before the *Society*; and if it be thought to deserve it, it may be communicated to the Public in their *Transactions*. I am,

*S I R,*

*Exeter, Jan. 16.*  
1748.

*Your most humble Servant,*

Benj. Heath.

*A Proposal for intirely removing the only real Defect in the lateral Operation for the Stone.*

THO' the lateral Method of cutting for the Stone is now almost universally allow'd to have greatly the Advantage of any other hitherto discover'd, yet it must be confess'd, that the Difficulty  
and

and Hazard attending the Extraction of large Stones this Way, has really robb'd it of its Title to Perfection; for tho' the Incision be made to the Wish, quite through the Prostate, and carried on to the Neck of the Bladder, if this be the Case (for it frequently happens to the contrary) as the Bladder itself in general is not, nor in all Probability can be, wounded in this Way of operating, the real Aperture after all for the Exit of a large Stone is so small, that the Parts must suffer most violent Lacerations, and a Train of consequent Evils.

The old Method indeed is greatly more obnoxious to this Misfortune, because the Parts are torn to Pieces by downright Violence, without any previous Incision of any Consequence to prepare them for the Egrefs of the Stone; and this Imperfection in the Operation is so notoriously apparent, and so destructive in fact, that this Method is deservedly in Disesteem, and almost universally discarded.

I wish it could be said, that the lateral Method was intirely free from this Imperfection; but I fear an impartial Inquiry will make it clear, that three Fourths of the Accidents which have attended this Operation, may in truth be attributed to excessive Distensions and Lacerations of the Bladder, those few Cases, which have miscarried from (what may have been supposed) a mere symptomatic Fever, will, I believe on a strict Disquisition, afford a shrewd Suspicion, that this very Fever itself arose from some Violence offer'd to the Bladder, in the forcible Extraction of the Stone.

I will not enter into a strict Examination of those fatal Symptoms which sometimes succeed the Operation in grown Subjects, in order to prove that they

in general proceed from the Bladder's being too roughly dealt with, because I take the Case to be of itself very evident : Unless the Habit is remarkably bad, to what else shall we attribute violent Pain, and the successive Inflammation, Tumour, Suppression of Urine, Mortification, &c.? These surely are not the Attendants on a simple Incision only ; for constant Experience evinces, that the Bladder, tho' an Organ of great Importance, and essentially necessary to the animal Oeconomy, may be wounded with as little Danger of any of the above-mention'd Evils, as any other membranous Part.

But I believe we shall not be at a Loss for the true Cause of all those Mischiefs, if the State of the Parts in the Extraction of a large Stone be closely consider'd.

It may be observ'd, when a Stone is laid hold of by the *Forceps*, that both together, Stone and *Forceps*, from the Screw-pin to the former, form a complete Wedge ; insomuch that a Person in a forcible Extraction, can scarcely conceive the Power applied to the Bladder, or the Force with which it is distended. If the Diameter of the Stone be equal to a third Part of the Length of the Chops of the *Forceps*, a Force of ten Pounds applied to them will be to the Wound of the Bladder, equal to thirty ; but how shocking must be the Case, when (either on account of the Magnitude of the Stone, or Narrowness of the Wound) a Man uses his utmost Force, and many such Instances in adult Bodies I have seen. The Power is then augmented by the Action of the Lever to two or three hundred ; a Force no doubt sufficient to reduce the Bladder and neighbouring Parts to Rags.

This

This is scarce to be credited ; but there is too much Reason to believe, that the Want of Success in Subjects arriv'd at adult Age, where the Stones are almost always large, is owing intirely to this very Circumstance.

When all this Violence is insufficient, there is at present no other establish'd Method, than either to attempt the making a second Incision on the Stone, as it is held in the *Forceps*, or to withdraw the latter, and to make it on the Bladder, in the flaccid State it then lies, without any Guide at all.

As to the first Method, it is evident the *Forceps*, Stone, and Bladder in Men are so much in the dark, that the Incision must be made with the utmost Difficulty ; indeed it is hardly possible to cut at all with any Certainty.

The other Way of cutting on the Bladder when the *Forceps* is withdrawn is much worse ; for if it be remember'd, that the Bladder lieth upon, and is contiguous with the *Rectum*, and that they are both in the same flabby State, it will appear impossible to cut the one, without (at least a very great Risque of) wounding the other.

This manifest Defect in the Operation would be intirely removed, if there always was a Director for the Knife left in the Bladder ; and this is so easily and completely to be done, that its great Simplicity seems to be the Reason it has not been attended to. If one Limb of the *Forceps*, from the Joint to its Extremity, be converted into a Staff, by making a deep Groove through its whole Length, it will better answer the End desired, than if it were possible to suffer the Staff itself to remain in the Bladder

during the Operation; for, when a large Stone is laid hold of, and the *Forceps* of course much divaricated, insomuch that the Extraction of the Stone is found to be impracticable with Safety, without a second Incision on the Parts upon the Stretch; you then slide the Point of a narrow Knife on the Groove of the *Forceps* quite on into the Bladder, and it will divide the very Part which needs it most; whilst the *Rectum*, on account of its flaccid State, will most certainly escape wounding. If the Wound is desired to be but little larger, the *Forceps* must be but gently drawn forward when the Incision is made; but if, on the other hand, the Stone prove extremely large, the *Forceps* should be then drawn forwards with a Force sufficient to put the Bladder upon the Stretch; and by this Management the Dilatation may be made as great or little as is required.

As the common Knife is not so proper for this Purpose on account of its Breadth, I have got one made of a more convenient Form, with a Gorget-Handle and Button-Point, as in the *Bubonocèle* Knife.

This Method, as it removes all Occasion for Violence to the Bladder, will reduce the Effects of the Operation nearly to those of a mere Incision only, which might, as now, sometimes prove fistulous, but I believe scarcely ever mortal.

I would not be understood to mean that it should be used in common Cases, and moderate sized Stones; no; Mr. *Chefelden* has sufficiently demonstrated to the World, by Experiment, the Inconvenience of cutting beyond the Prostate, when it can be avoided. I only say this, that where a large Stone offers, and the Circumstances are such, that the Operator is under a Necessity of tearing the Parts to  
 Pieces,



Pieces, unless divided by an Incision, the latter is more safe and eligible.

The principal Advantages of this Contrivance are, 1. That the Degree of Dilatation is in the Operator's Power, to the greatest Exactness: 2. That it will infallibly divide those Parts only which are upon the Stretch; and for this Reason, 3. The *Rectum*, if it is empty, and consequently flaccid, must certainly escape wounding. Its great Simplicity is another Circumstance much in its Favour; for it seems allow'd on all Hands, the less an Operation is incumber'd with Instruments the better. In common Cases, where the Assistance of this Method is not wanted, the *Forceps* is not the least incommoded as to its general Use; but if the Stone prove large (which can never be certainly known till it is laid hold of), the Remedy is at hand.

*Plimouth*, Jan. 6.  
1748-9.

John Mudge.

*P. S.*

These *Forceps* and Knife are represented in TAB.

I. *Fig. 3, 4, 5.*

*Fig. 3.* The *Forceps*, with the Knife, *a b*, applied to one of the Checks of it. *c*, the Button. *bfg*, the Handle.

*Fig. 4.* The Check of the *Forceps* with the Groove in it *de*.

*Fig. 5.* The Knife. The Blade *ab*; the Button *c*, made to fit, and slide along the Groove *de*; *bfg* the Handle; *cab* the sharp Edge; *cbf* the Back of the Knife, which must have the same Curve as the Back of the Check of the *Forceps* or Groove to which it is to be applied, as in *Fig. 3.*

*C. M.*  
IX.